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| TRANSMITTAL FORM (to be used for all correspondence after initial filing) | Application Number | 10/732,850 |
| | Filing Date | 12/10/2003 |
| | First Named Inventor | Marvin L. Green |
| | Art Unit | 1714 |
| | Examiner Name | Niland |
| Total Number of Pages in This Submission | Attorney Docket Number | 0906S-000337 (IN-5587) |

| ENCLOSURES (check all that apply) | | | | |
|---|--|---|--------------------|--|
| <input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ | <input type="checkbox"/> After Allowance Communication to Technology Center (TC) <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Appeal Brief Under 37 C.F.R. 41.37 and Return Postcard | | |
| <table border="1"><tr><td>Remarks</td><td>The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 23-3425. A duplicate copy of this sheet is enclosed.</td></tr></table> | | | Remarks | The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 23-3425. A duplicate copy of this sheet is enclosed. |
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| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT | | | | |
| Firm or Individual name | Harness, Dickey & Pierce, P.L.C. | Attorney Name Anna M. Budde | Reg. No. 35,085 | |
| Signature | <i>Anna M Budde</i> | | | |
| Date | February 19, 2007 | | | |

| CERTIFICATE OF TRANSMISSION/MAILING | | | |
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| I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below. | | | |
| Typed or printed name | Anna M. Budde | Express Mail Label No. | EV 757 778 984 US (2/19/2007) |
| Signature | <i>Anna M Budde</i> | Date | February 19, 2007 |

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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FEE TRANSMITTAL for FY 2007

Effective 2/8/2006. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 500

Complete if Known

Application Number 10/732,850
Filing Date December 10, 2003
First Named Inventor Marvin L. Green et al.
Examiner Name Niland
Art Unit 1714
Attorney Docket No. IN-5587 (0906S-337)

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit Account Number 23-3425

Deposit Account Name BASF Corporation

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments
☐ Charge any additional fee(s) during the pendency of this application
☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

| Large Entity | | Small Entity | | Fee Description | Fee Paid |
|--------------|----------|--------------|----------|------------------------|----------|
| Fee Code | Fee (\$) | Fee Code | Fee (\$) | | |
| 1011 | 300 | 2011 | 150 | Utility filing fee | |
| 1012 | 200 | 2012 | 100 | Design filing fee | |
| 1013 | 200 | 2013 | 100 | Plant filing fee | |
| 1014 | 300 | 2014 | 150 | Reissue filing fee | |
| 1005 | 200 | 2005 | 100 | Provisional filing fee | |

SUBTOTAL (1)

(\$) 0

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

| | | Extra Claims | Fee from below | Fee Paid |
|--------------------|-------|--------------|----------------|----------|
| Total Claims | 20 ** | 0 | X | 0 |
| Independent Claims | 3 ** | 0 | X | 0 |
| Multiple Dependent | | | | 0 |

| Large Entity | | Small Entity | | Fee Description |
|--------------|----------|--------------|----------|--|
| Fee Code | Fee (\$) | Fee Code | Fee (\$) | |
| 1202 | 50 | 2202 | 25 | Claims in excess of 20 |
| 1201 | 200 | 2201 | 100 | Independent claims in excess of 3 |
| 1203 | 360 | 2203 | 180 | Multiple dependent claim, if not paid |
| 1204 | 200 | 2204 | 100 | ** Reissue independent claims over original patent |
| 1205 | 50 | 2205 | 25 | ** Reissue claims in excess of 20 and over original patent |

SUBTOTAL (2)

(\$) 0

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

| Large Entity | | Small Entity | | Fee Description | Fee Paid |
|--------------|----------|--------------|----------|--|----------|
| Fee Code | Fee (\$) | Fee Code | Fee (\$) | | |
| 1051 | 130 | 2051 | 65 | Surcharge - late filing fee or oath | |
| 1052 | 50 | 2052 | 25 | Surcharge - late provisional filing fee or cover sheet. | |
| 1053 | 130 | 1053 | 130 | Non-English specification | |
| 1812 | 2,520 | 1812 | 2,520 | For filing a request for reexamination | |
| 1804 | 920* | 1804 | 920* | Requesting publication of SIR prior to Examiner action | |
| 1805 | 1,840* | 1805 | 1,840* | Requesting publication of SIR after Examiner action | |
| 1251 | 120 | 2251 | 60 | Extension for reply within first month | |
| 1252 | 450 | 2252 | 225 | Extension for reply within second month | |
| 1253 | 1020 | 2253 | 510 | Extension for reply within third month | |
| 1254 | 1,590 | 2254 | 795 | Extension for reply within fourth month | |
| 1255 | 2,160 | 2255 | 1080 | Extension for reply within fifth month | |
| 1401 | 500 | 2401 | 250 | Notice of Appeal | 500 |
| 1402 | 500 | 2402 | 250 | Filing a brief in support of an appeal | |
| 1403 | 1000 | 2403 | 500 | Request for oral hearing | |
| 1452 | 500 | 2452 | 250 | Petition to revive - unavoidable | |
| 1453 | 1500 | 2453 | 750 | Petition to revive - unintentional | |
| 1462 | 400 | 1462 | 400 | Petition fee under 37 CFR 1.17(f) | |
| 1463 | 200 | 1463 | 200 | Petition fee under 37 CFR 1.17(g) | |
| 1464 | 130 | 1464 | 130 | Petition fee under 37 CFR 1.17(h) | |
| 1807 | 50 | 1807 | 50 | Processing fee under 37 CFR 1.17 (q) | |
| 1806 | 180 | 1806 | 180 | Submission of Information Disclosure Stmt | |
| 8021 | 40 | 8021 | 40 | Recording each patent assignment per property (times number of properties) | |
| 1809 | 790 | 2809 | 395 | Filing a submission after final rejection (37 CFR § 1.129(a)) | |
| 1810 | 790 | 2810 | 395 | For each additional invention to be examined (37 CFR § 1.129(b)) | |
| 1801 | 790 | 2801 | 395 | Request for Continued Examination (RCE) | |

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid SUBTOTAL (3) (\$) 500

4. SEARCH/EXAMINATION FEES

| | | | | | |
|------|-----|------|-----|-------------------------|--|
| 1111 | 500 | 2111 | 250 | Utility Search Fee | |
| 1112 | 100 | 2112 | 50 | Design Search Fee | |
| 1113 | 300 | 2113 | 150 | Plant Search Fee | |
| 1114 | 500 | 2114 | 250 | Reissue Search Fee | |
| 1311 | 200 | 2311 | 100 | Utility Examination Fee | |
| 1312 | 130 | 2312 | 65 | Design Examination Fee | |
| 1313 | 160 | 2313 | 80 | Plant Examination Fee | |
| 1314 | 600 | 2314 | 300 | Reissue Examination Fee | |

SUBTOTAL (4) (\$) 0

SUBMITTED BY

Complete (if applicable)

Name (Print/Type) Anna M. Budde Registration No. (Attorney/Agent) 35085 Telephone (248) 641-1600
Signature Anna M. Budde Date February 19, 2007

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PATENT



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES**

Application No.: 10/732,850
Filing Date: December 10, 2003
Applicant: Marvin L. Green et al.
Group Art Unit: 1714
Examiner: Patrick D. Niland
Title: Use of Urea Crystals for Non-Polymeric Coatings
Attorney Docket: IN-5587
HDP Docket No.0906S-337

Director of the United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Appeal Brief Under 37 C.F.R. § 41.37

Sir:

This is an appeal from the Office Action mailed August 28, 2006, finally rejecting all pending claims. A Notice of Appeal was mailed on December 19, 2006 appealing all of the rejected claims. This Brief is due without extension on February 20, 2007, as February 19 falls on Presidents Day.

This Brief is accompanied by the fee under 37 C.F.R. § 41.20(b)(2).

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| <p>I. Claims 1-3 and 7-15 are not anticipated by the Boisseau publication because the Boisseau publication does not teach or disclose a non-polymeric coating composition comprising a monomeric material having a plurality of active hydrogen groups.</p> | 3 |
| <p>II Claims 1-15 are patentable over the combination of the Boisseau publication, Green patent, and Ohrbom patent because this combination does not teach or disclose a non-polymeric coating composition</p> | 5 |
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Real Party in Interest

The real party in interest is BASF Corporation, to which the inventors assigned all rights in this invention. The assignment was recorded by the USPTO on December 10, 2003 at reel 014795, frame 0489.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of Claims

All of the pending claims, claims 1-15, stand finally rejected. This appeal is taken as to all of the pending claims.

Status of Amendments

No amendment was filed after the final rejection.

Summary of Claimed Subject Matter

Independent claims 1 and 13 are pending. Claim 1 is to a thermosetting, non-polymeric coating composition comprising at least one monomeric material, at least one crosslinker reactive with the at least one monomeric material, and a crystalline reaction product of an amine and an isocyanate. Page 3, lines 6-11. The monomeric material has active hydrogen groups such as carbamate groups, terminal urea groups, hydroxyl groups, carboxyl groups, mercapto groups, primary and secondary amine groups, and amides of primary amines. Page 5, lines 1-10. The crystalline reaction product may be, for example, a reaction product of a monoamine such as the reaction product of benzyl amine with hexamethylene diisocyanate. Example 2, page 22, line 7 to page 23, line 3.

Claims 2-12 are dependent on claim 1.

Independent claim 13 claims a method of coating a substrate with a coating composition by applying to the substrate a layer of thermosetting, non-polymeric coating composition that has been described for claim 1 and curing the applied layer to produce a cured coating layer on the substrate. Page 4, lines 1-7; see also page 18, lines 3-13.

Claims 14 and 15 are dependent on claim 15.

Grounds of Rejection to Be Reviewed on Appeal

Claims 1-3 and 7-15 stand rejected under 35 U.S.C. § 102(b) as anticipated by Boisseau et al., U.S. Patent Application Publication No. 2002/0155278.

Claims 1-15 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Boisseau et al., U.S. Patent Application Publication No. 2002/0155278 in view of Green et al., U.S. Patent No. 5,872,195 and Ohrbom et al., U.S. Patent No. 5,756,213.

Argument

I. Claims 1-3 and 7-15 are not anticipated by the Boisseau publication because the Boisseau publication does not teach or disclose a non-polymeric coating composition comprising a monomeric material having a plurality of active hydrogen groups.

Appellants' coating composition is non-polymeric, unlike the polymeric and oligomeric coatings described in Appellants' background, page 2, paragraphs [0003] and [0004] and exemplified in the Boisseau publication.

In the Reply mailed June 8, 2006, Appellants responded to a rejection for indefiniteness by asserting that the monomeric material common to all of the claims is not the product of a polymerization reaction where multiple monomers are linked together. Specifically, Appellants asserted that the monomeric material is not an oligomer or polymer of repeating subunits. Reply mailed June 8, 2006, at page 2.

Furthermore, Appellants have submitted in the Reply mailed October 25, 2006 a discussion of oligomers from the Encyclopedia of Polymer Science and Engineering (2d Ed.), Vol. 10, p. 432 (1988) that recognize oligomers as a low molecular weight polymerization product of monomers:

The International Union of Pure and Applied Chemistry (IUPAC) defines oligomer as a substance composed of molecules containing a few of one or more species of atoms or groups of atoms (constitutional units) repetitively linked to each other (a). This does not specify an absolute degree of polymerization or molecular weight that distinguishes an oligomer from a polymer, but the IUPAC definition further states that the physical properties of an oligomer vary with the addition or removal of one or a few of the constitutional units from its molecules. This structure-property definition is perhaps the most meaningful definition of an

oligomer. *The conversion of a monomer or a mixture of monomers into an oligomer* is defined as oligomerization. This definition does not imply any constraints on the oligomer polydispersity. Therefore, although monodisperse oligomers provide more valuable information than polydisperse oligomers, the latter are still important.

Encyclopedia of Polymer Science and Engineering (2d Ed.), Vol. 10, p. 432 (1988)

(emphasis added).

Appellants further submitted the definition of a monomer from the same source in the Reply mailed October 25, 2006:

A monomer is defined as a compound consisting of molecules each of which can provide one or more constitutional units of a polymer (or oligomer) (1).

Encyclopedia of Polymer Science and Engineering (2d Ed.), Vol. 10, p. 25 (1988).

Against these authorities the Examiner posits his self-made definition: "The oligomers of the reference react further to give higher molecular weight polymer when cured and are therefore necessarily . . . 'monomeric'." This Examiner's opinion is, however, not evidence; further, it is contrary to Appellant's specification and the IUPAC definitions of these materials.

The Boisseau publication discloses only polymeric coating compositions. Moreover, the Boisseau publication does not disclose coating compositions comprising monomeric material having a plurality of active hydrogen groups; instead, the Boisseau publication discloses film forming polymers and oligomers. Page 4, para. [0048], first sentence, para. [0050], first sentence & para. [0052] first sentence; page 5, para. [0055] first sentence; page 9, para. [0098].

Because the Boisseau publication does not teach or disclose every element of the present claims, Applicants submit that the rejection should be REVERSED.

II. Claims 1-15 are patentable over the combination of the Boisseau publication, Green patent, and Ohrbom patent because this combination does not teach or disclose a non-polymeric coating composition.

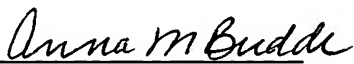
As discussed above, the Boisseau publication teaches polymeric coating compositions. The Green patent teaches a coating composition containing a polymer resin, curing agent and compound (c). Green patent, Abstract; col. 2, lines 1-11; col. 5, lines 28-36; claim 1. The Ohrbom patent is cited for its teaching in columns 2-8 as allegedly teaching something "which falls within the scope of the instant claims 5-6"; however, Appellants believe that Ohrbom instead teaches reacting a compound with hydroxy and carbamate functionality with a dialkyl carbonate, cyclic carbonate, or carbon dioxide, none of which is a lactone or hydroxy carboxylic acid. Furthermore, there is no motivation to combine the teachings of these documents, as the Examiner's general "expect the benefits of these film formers" is nothing more than the old "invitation to experiment" standard.

In view of these deficiencies, Applicants submit that the rejection should be REVERSED.

Conclusion

The present claims are patentable over the cited art. Appellants, therefore, respectfully petition this Honorable Board to reverse the final rejection of the claims on each ground and to indicate that all claims are allowable.

Respectfully submitted,


Anna M. Budde
Registration No. 35,085

February 19, 2007
Harness, Dickey & Pierce, P.L.C.
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Claim Appendix

Copy of the Claims Appealed

1. A thermosetting, non-polymeric coating composition comprising at least one monomeric material having a plurality of active hydrogen groups, at least one crosslinker reactive with the at least one monomeric material, and a crystalline reaction product of an amine and an isocyanate.
2. A thermosetting, non-polymeric coating composition according to claim 1, wherein the active hydrogen groups are selected from carbamate groups, terminal urea groups, hydroxyl groups, carboxylic acid groups, and combinations thereof.
3. A thermosetting, non-polymeric coating composition according to claim 1, wherein the crosslinker is reactive with the crystalline reaction product.
4. A thermosetting, non-polymeric coating composition according to claim 1, wherein the at least one monomeric material having a plurality of active hydrogen groups comprises a carbamate-functional or terminal urea-functional monomeric material comprising at least two functional groups, at least one of which is a carbamate or terminal urea group that is the reaction product of (1) an hydroxyl group of a first compound that is the result of a ring-opening reaction between a compound with an epoxy group and a compound with an organic acid group and (2) cyanic acid or a carbamate or urea group-containing compound.

5. A thermosetting, non-polymeric coating composition according to claim 1, wherein the at least one monomeric material having a plurality of active hydrogen groups comprises a carbamate-functional or terminal urea-functional material that is the reaction product of (1) a compound comprising a carbamate or terminal urea group and an active hydrogen group that is reactive with (2), and (2) a lactone or an hydroxy carboxylic acid.

6. A thermosetting, non-polymeric coating composition according to claim 1, wherein the at least one monomeric material having a plurality of active hydrogen groups comprises a carbamate-functional or terminal urea-functional material that is the reaction product of a first material (A) that is prepared by reacting (1) a compound comprising a primary carbamate or terminal urea group and an hydroxyl group and (2) a lactone or a hydroxy carboxylic acid reacted with a second material (B) that is reactive with hydroxyl groups on a plurality of molecules of compound (1), but that is not reactive with the carbamate or urea groups on compound (1).

7. A thermosetting, non-polymeric coating composition according to claim 1, wherein the at least one monomeric material having a plurality of active hydrogen groups comprises a carbamate-functional or terminal urea-functional material that is the reaction product of (1) a first material that is the reaction product of a mixture including at least a polyisocyanate and an active hydrogen-containing chain extension agent with (2) a compound comprising a group that is reactive with said first material and a

carbamate or terminal urea group or group that can be converted to a carbamate or terminal urea group.

8. A thermosetting, non-polymeric coating composition according to claim 1, wherein the at least one monomeric material having a plurality of active hydrogen groups comprises a carbamate-functional material having at least two carbamate groups and a hydrocarbon moiety with about 24 to about 72 carbon atoms,

9. A thermosetting, non-polymeric coating composition according to claim 1, wherein the amine is a primary monoamine.

10. A thermosetting, non-polymeric coating composition according to claim 1, wherein the amine is selected from the group consisting of benzylamine, ethylamine, propylamine, butylamine, pentylamine, hexylamine, methylbutylamine, ethylpropylamine, ethylbutylamine, and combinations thereof.

11. A thermosetting, non-polymeric coating composition according to claim 1, wherein the isocyanate comprises 1,6-hexamethylene diisocyanate.

12. A thermosetting, non-polymeric coating composition according to claim 1, further comprising fumed silica.

13. A method of coating a substrate with a coating composition, having steps of:

applying to the substrate a layer of thermosetting, non-polymeric coating composition comprising at least one monomeric material having a plurality of active hydrogen groups, at least one crosslinker reactive with the at least one monomeric material, and a crystalline reaction product of a primary monoamine and an isocyanate; and

curing the applied layer to produce a cured coating layer on the substrate.

14. A method according to claim 13, wherein the coating composition further comprises fumed silica.

15. A method according to claim 13, wherein the thermosetting, non-polymeric coating composition is applied as a clearcoat layer over a previously applied basecoat coating layer.

EVIDENCE APPENDIX

Evidence entered by examiner and relied on by appellant

Appellants quotation in the Reply mailed October 25, 2006 of a discussion of oligomers from the Encyclopedia of Polymer Science and Engineering (2d Ed.), Vol. 10, p. 432 (1988) and definition of monomer from the Encyclopedia of Polymer Science and Engineering (2d Ed.), Vol. 10, p. 25 (1988), both quoted again in the argument above.

RELATED PROCEEDINGS APPENDIX

None.